SYLVANIA

engineering data service 6BY8

MECHANICAL DATA

Bulb	T-6½
Base	E9-1, Miniature Button 9-Pin
Outline	6-3
Basing	9FN
Cathode	Coated Unipotential
Mounting Position	Any

ELECTRICAL DATA

HEATER CHARACTERISTICS

Heater Voltage	6.3 Volts	
Heater Current	600 Ma	
Heater Warm-up Time[1]	11 Seconds	
Heater Cathode Voltage (Design Center Values)		
Heater Negative with Respect to Cathode		
Total DC and Peak	200 Volts	Max.
Heater Positive with Respect to Cathode		
DC	100 Volts	Max.
Total DC and Peak	200 Volts	Max.

DIRECT INTERELECTRODE CAPACITANCES (Shielded)[2]

Grid to Plate	0.0035 $\mu\mu f$	Max.
Input: g1 to (h+k+g2+g3+I.S.)	5.5 $\mu\mu f$	
Output: p to (h+k+g2+g3+I.S.)	5.0 $\mu\mu f$	
Diode Plate to All: D_p to $(h+D_k+k+g1+g2+g3+p+I.S.)$	4.8 $\mu\mu f$	

RATINGS (Design Center System)

Pentode Section

Plate Voltage	300 Volts	Max.
Grid No. 2 Voltage	See Rating Chart	
Grid No. 2 Supply Voltage	300 Volts	Max.
Negative Grid No. 1 Voltage	50 Volts	Max.
Positive Grid No. 1 Voltage	0 Volts	Max.
Plate Dissipation	3 Watts	Max.
Grid No. 2 Dissipation	0.65 Watts	Max.

Diode Section

Peak Inverse Plate Voltage	430 Volts	Max.
Peak Plate Current	180 Ma	Max.
DC Plate Current	45 Ma	Max.

CHARACTERISTICS AND TYPICAL OPERATION

Class A_1 Amplifier

Plate Voltage	100	250	250	Volts
Grid No. 3 Voltage	Connected to Cathode at Socket			
Grid No. 2 Voltage	100	125	150	Volts
Cathode Resistor	150	100	68	Ohms
Plate Current	5.0	7.6	10.6	Ma
Grid No. 2 Current	2.1	3.0	4.3	Ma
Transconductance	3900	4500	5200	μmhos
Plate Resistance (approx.)	0.5	1.5	1.0	Megohms
Ec1 for Ib = 10 μa (approx.)	-4.2	-5.5	-6.5	Volts
Average Diode Current with 10 Volts DC applied (Test Condition Only)			60	Ma

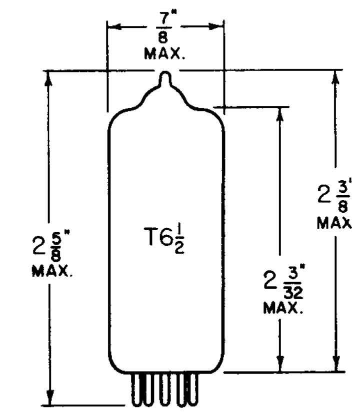
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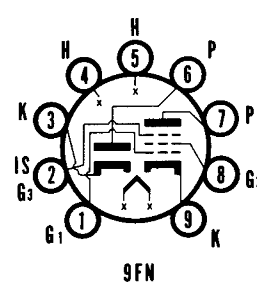
1. *Heater Warm-up Time is defined as the time required for the voltage across the heater to reach 80% of its rated value after applying four (4) times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to three (3) times rated heater voltage divided by rated heater current.*
2. *External Shield No. 315 connected to Pentode Cathode.*

QUICK REFERENCE DATA

The Sylvania Type 6BY8 has a sharp cutoff pentode and high perveance diode contained in one envelope. The diode section is similar to one section of a 6AL5 and is intended for limiter or detector applications. The pentode section is similar to a 6AU6 and is intended for use as an rf or if amplifier.

Type 6BY8 has a controlled heater warm-up time for series string operation.





9FN

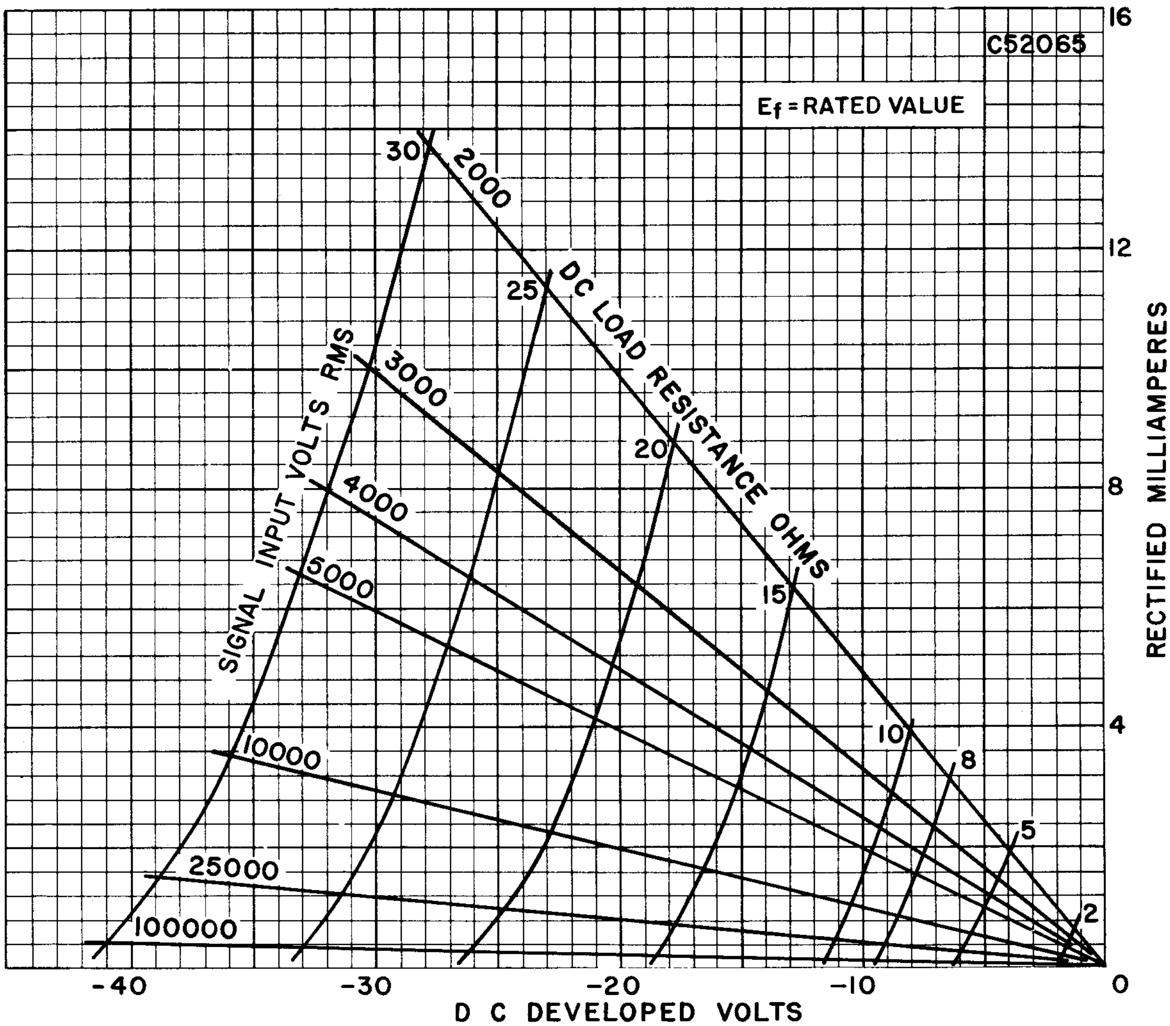
SYLVANIA ELECTRIC PRODUCTS INC.

RADIO TUBE DIVISION
EMPORIUM, PA.

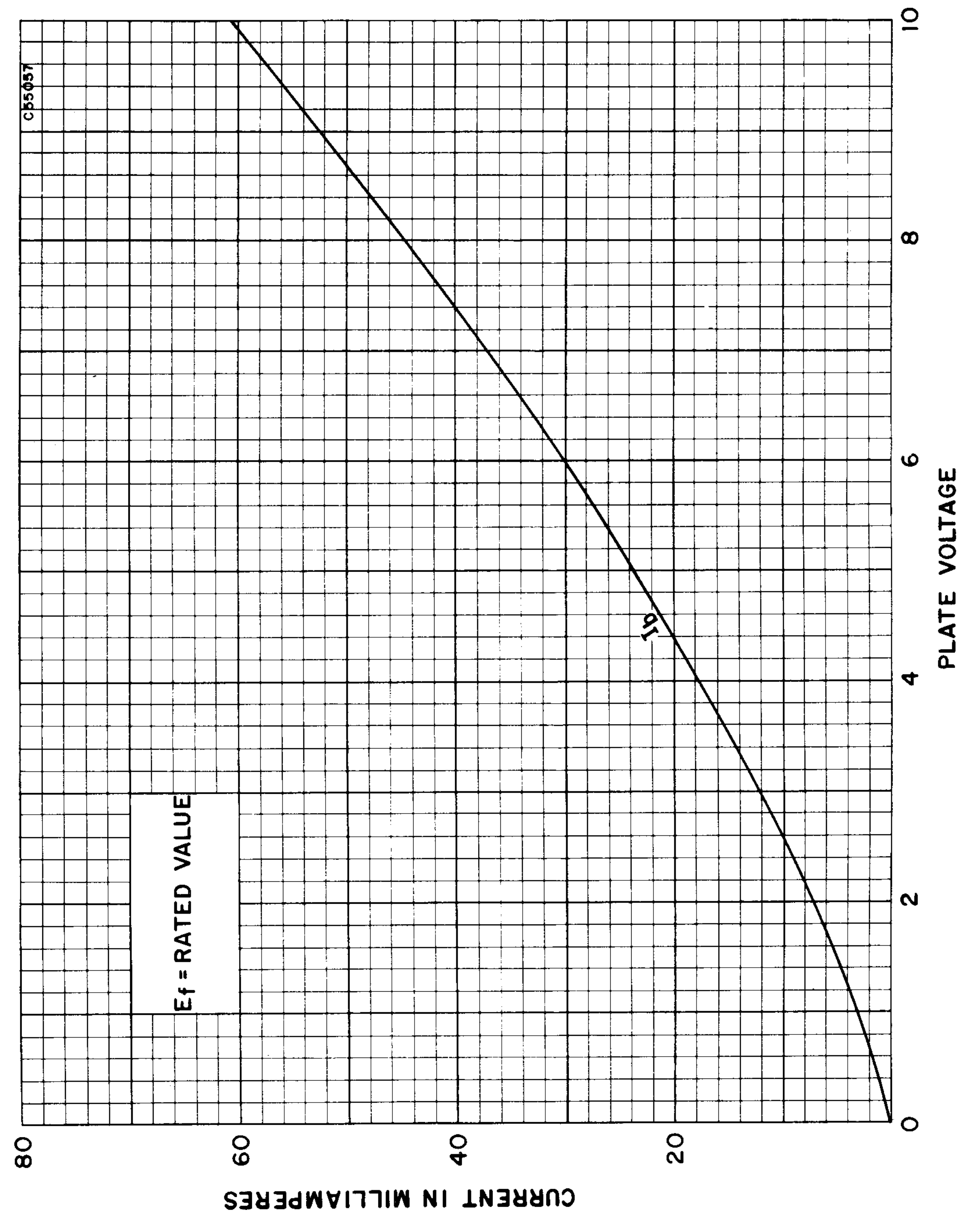
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JUNE, 1957

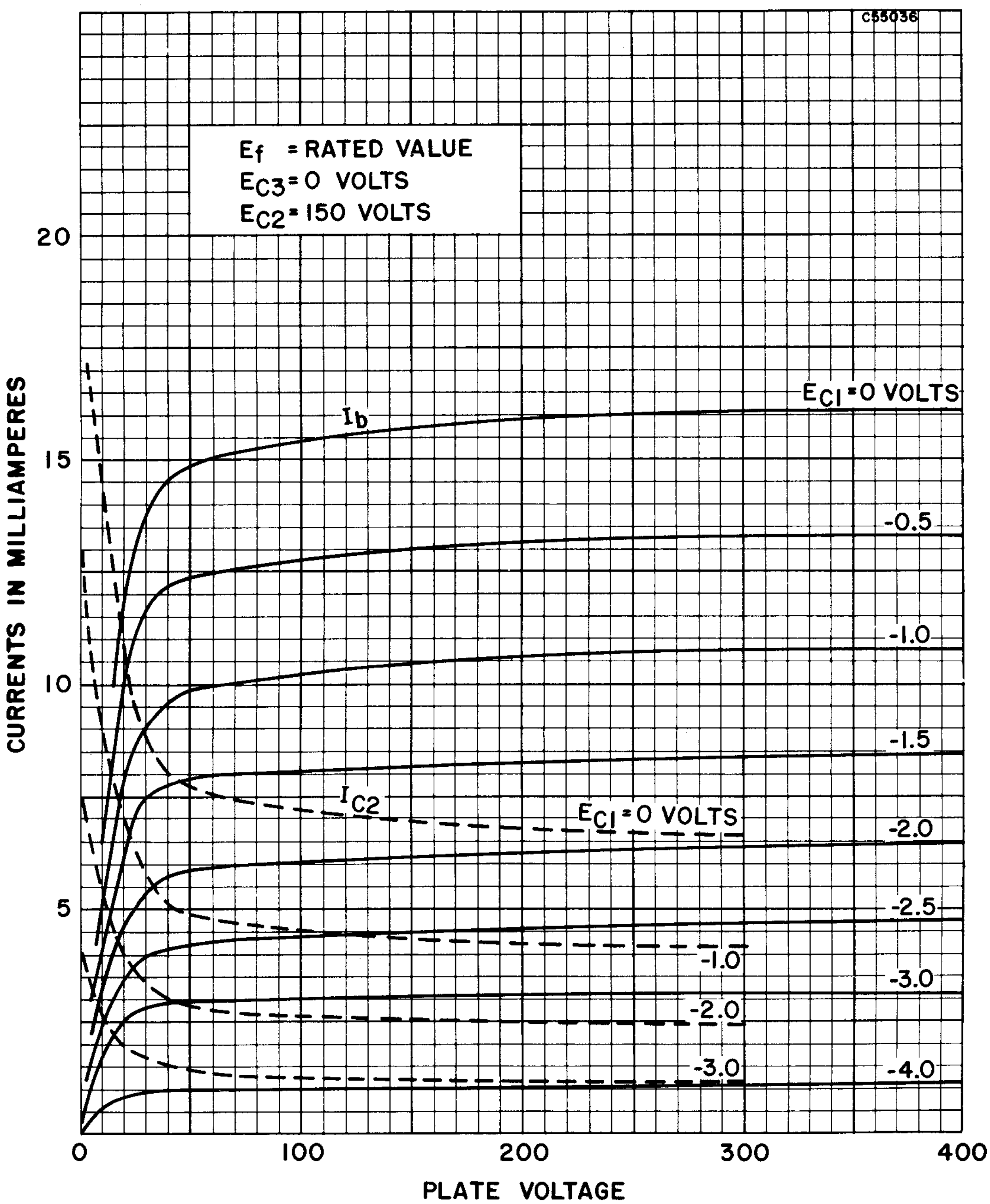
AVERAGE OPERATING CHARACTERISTICS
HALF WAVE RECTIFICATION—SINGLE DIODE



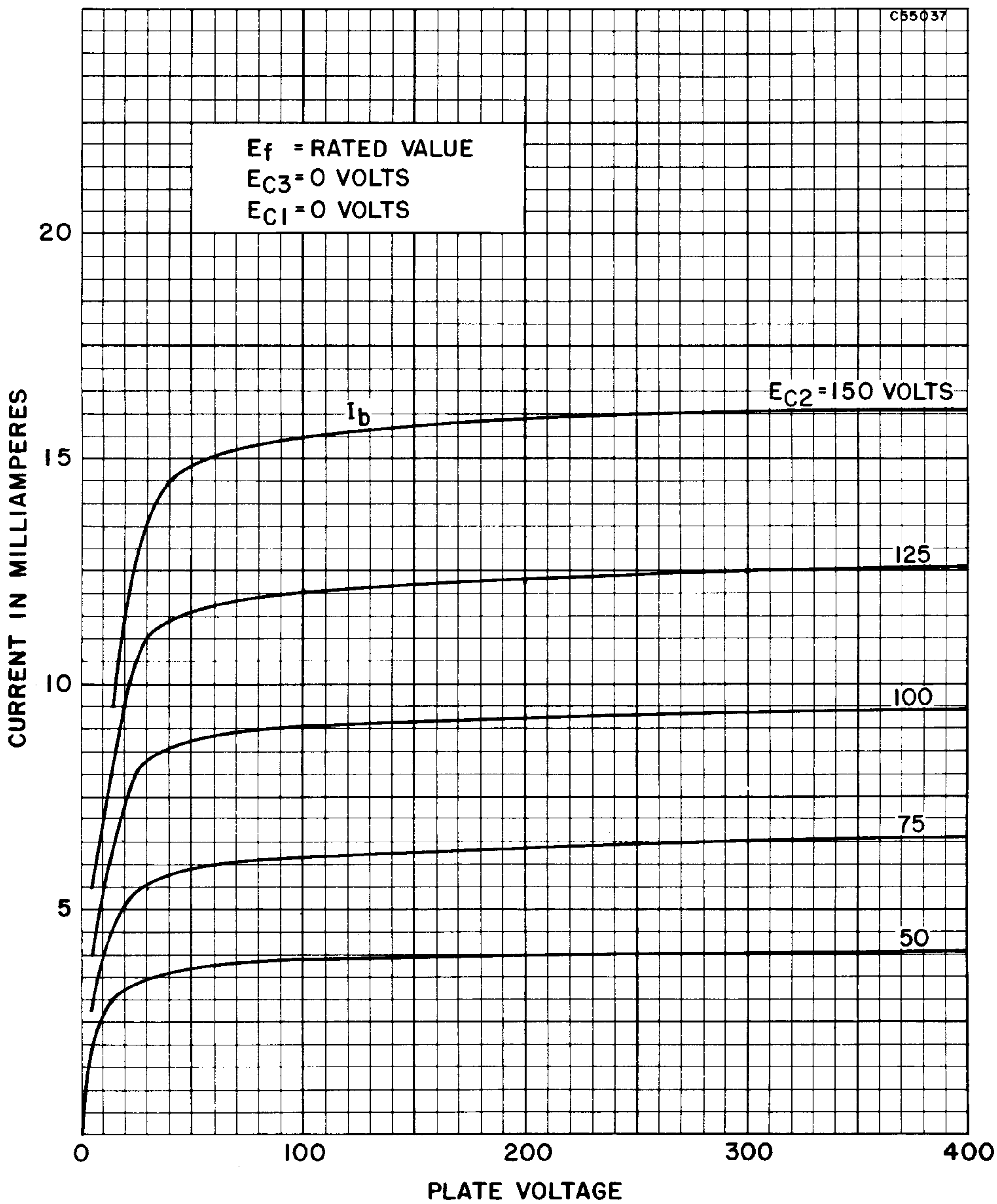
AVERAGE CHARACTERISTICS
(DIODE SECTION)



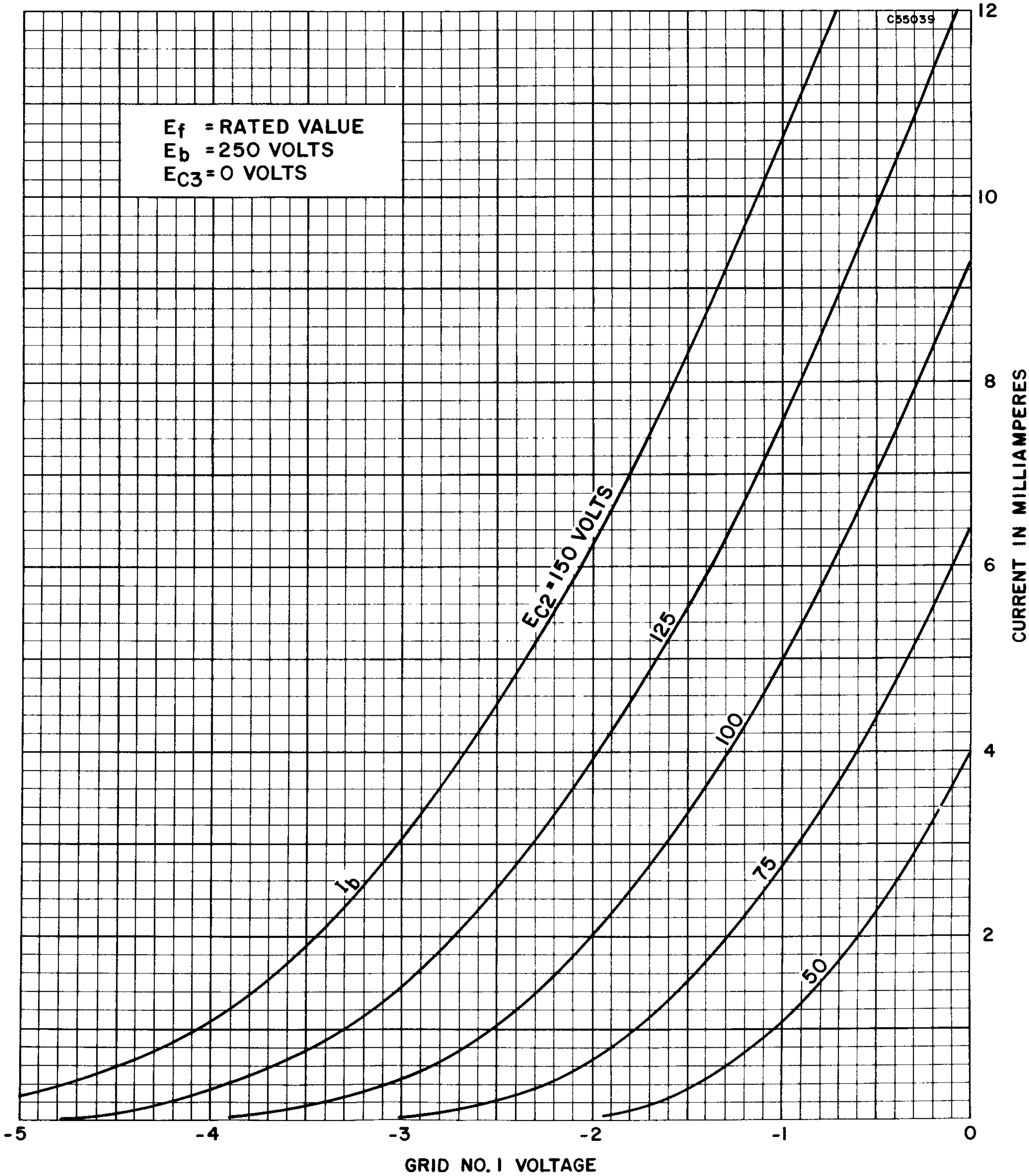
AVERAGE PLATE CHARACTERISTICS



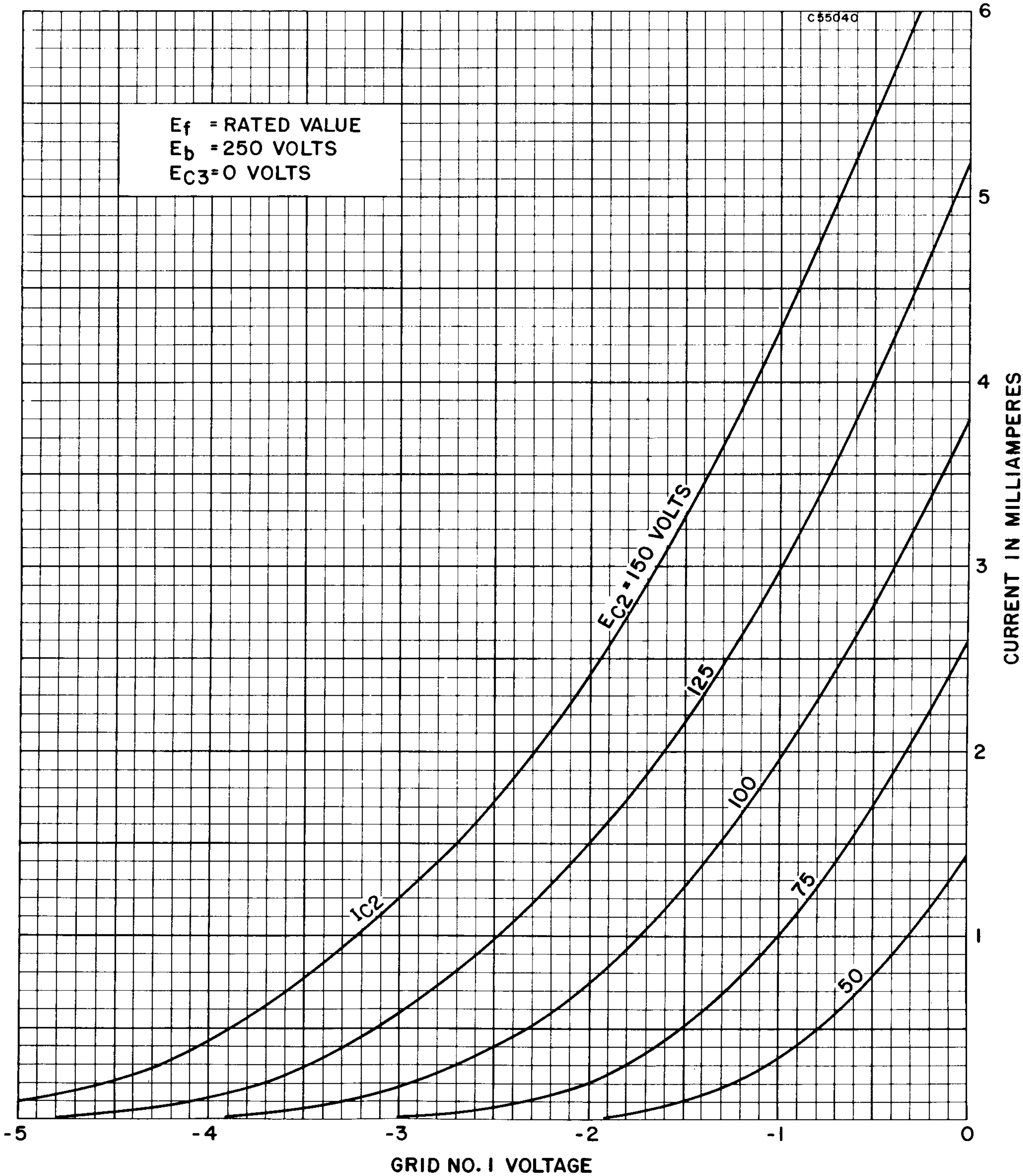
AVERAGE PLATE CHARACTERISTICS



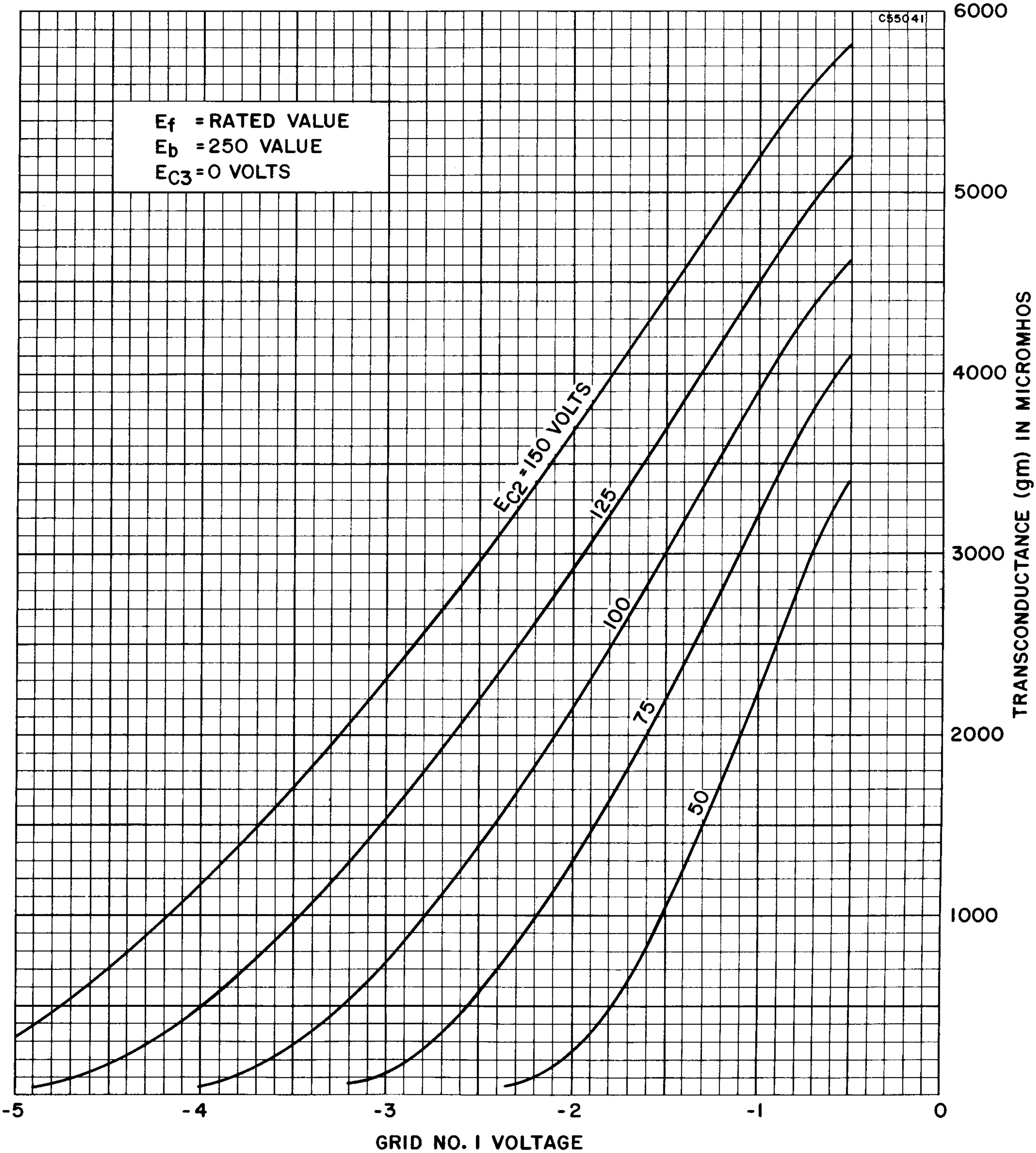
AVERAGE TRANSFER CHARACTERISTICS



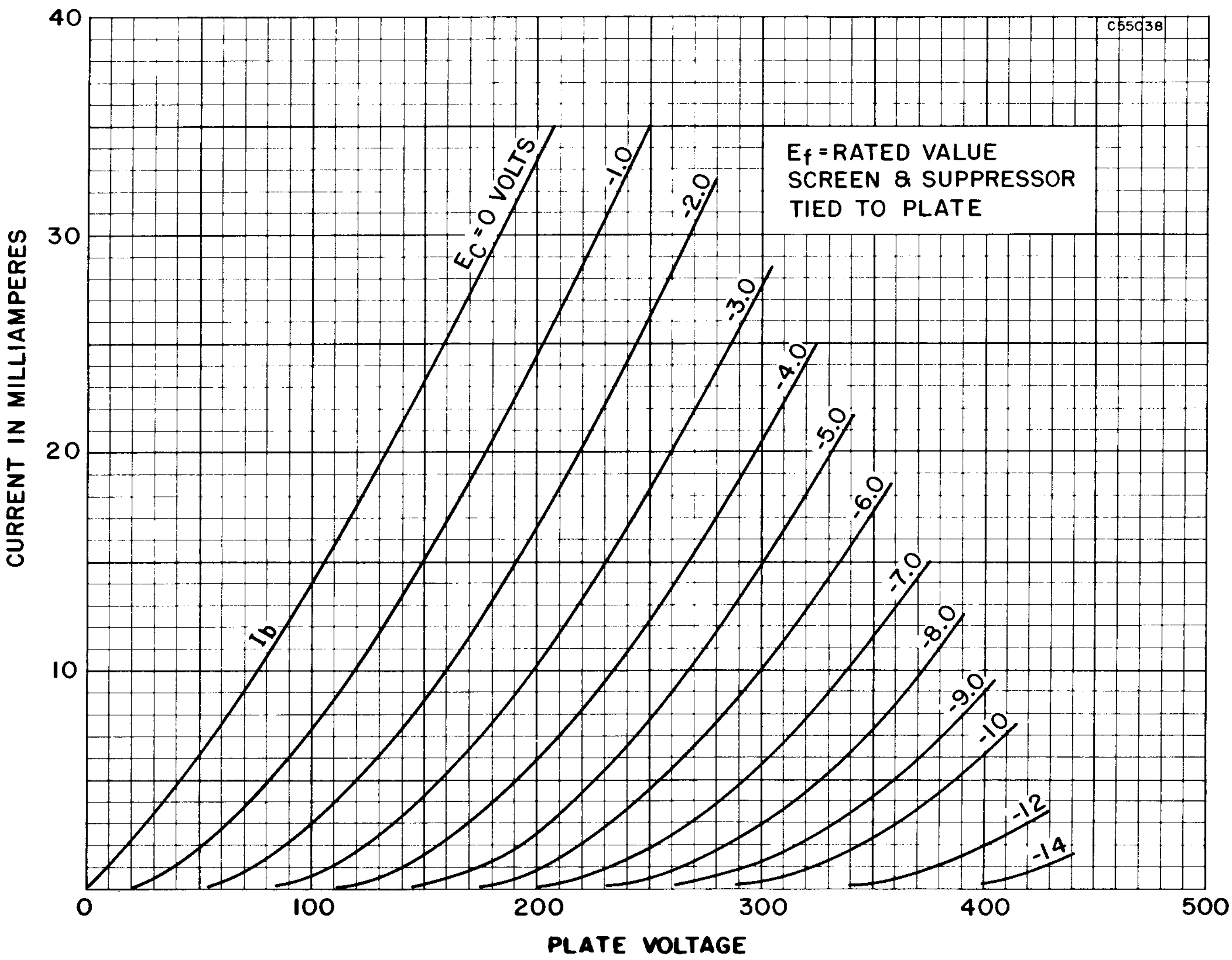
AVERAGE TRANSFER CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS
(TRIODE CONNECTED)



RATING CHART

